

Code No: R204103J

R20

Set No. 1

IV B.Tech I Semester Regular Examinations, January – 2024

PRODUCTION PLANNING AND CONTROL

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

*Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks*

UNIT - I

- 1 a) What are the objectives of the PPC department that has been set up in a production system? [7]
b) What do you understand by production system? Explain the functions of production system. [7]

(OR)

- 2 a) How does the batch manufacturing system work? List its advantages, disadvantages, and applications. [7]
b) What are the disadvantages of PPC? [7]

UNIT - II

- 3 a) What is forecasting? What role does forecasting play in an industry? [7]
b) Calculate the two regression equations of X on Y and Y on X from the data given below, taking deviations from a actual means of X and Y. Estimate the likely demand when the price is Rs.20.

Price (₹)	10	12	13	12	16	15
Demand	40	38	43	45	37	43

[7]

(OR)

- 4 a) Write about short term forecasting? What are its merits and demerits? [7]
b) The annual sales of a company are given below.

Year	1990	1991	1992	1993	1994	1995
Sales (₹)	50000	65000	75000	52000	72000	?

[7]

By using least square method compute the sales for the year 1995.

UNIT - III

- 5 a) What is inventory? What are the functions of inventory? [7]
b) What is an EOQ model? Derive the expression for the EOQ with proper assumptions.

Sankar runs a mail-order business for gym equipment. Annual demand for the Trico Flexers is 16,000. The annual holding cost per unit is ₹2.50 and the cost to place an order is ₹50. What is the economic order quantity? [7]

(OR)

- 6 a) What are the various inventory costs included in a firm? Give examples and a detailed description of them. [7]
 b) Perform ABC analysis using the following data.

Item	1	2	3	4	5	6	7	8	9	10
Units	700	2400	150	60	3800	4000	6000	300	30	2900
Unit price, ₹	50	30	100	220	15	5	2	35	80	4

[7]

UNIT - IV

- 7 a) What is routing? What are the objectives of routing? [4]
 b) Four jobs 1,2,3,4 are to be processed on each of five machines A, B, C, D and E in the orders ABCDE. Find the total minimum elapsed time if no passing of jobs is permitted. Also determine idle time for each machine.

Machine / Jobs	A	B	C	D	E
1	7	5	2	3	9
2	6	6	4	5	10
3	5	4	5	6	8
4	8	3	3	2	6

[10]

(OR)

- 8 a) What is aggregating planning? Write any four functions of it? [4]
 b) Using Shortest Processing Time method find
 (i) Sequence (ii) Average flow time (iii) Average lateness
 (iv) Average tardiness and (v) Average number jobs for the data given below.

Jobs	A	B	C	D	E	F
Processing time(days)	2	8	4	10	5	12
Due date(days)	7	16	4	17	15	18

[10]

UNIT - V

- 9 Describe dispatching control in continuous production. [14]
 (OR)
 10 Write the applications of computer in PPC. [14]